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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,027	03/10/2004	Dong-Jin Park	1568.1092	2164
49455	7590	11/14/2006	EXAMINER	
STEIN, MCEWEN & BUI, LLP 1400 EYE STREET, NW SUITE 300 WASHINGTON, DC 20005			RUDE, TIMOTHY L	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/796,027

Applicant(s)

PARK, DONG-JIN

Examiner

Timnothy L. Rude

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,4,6-8 and 11-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4,6-8 and 11-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claims*

1. Claims 1 and 8 are amended. Claims 2, 3, 5, 9, and 10 are canceled. Claim 16 is added.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4, 6-7, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art (AAPA) in view of Park et al., (Park), US 2004/0032385.

The AAPA discloses and shows in Fig. 3, a field-sequential liquid crystal display panel, comprising:

thin film transistors (332); cell electrodes (El 1R ..... E31 B) respectively coupled to the drains of the thin film transistors; scan electrode lines (LS1 ..... LSn) coupled to the gates of the thin film transistors; data electrode lines (LD1 ..... LD3)

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coupled to the sources of the thin film transistors; and storage capacitors (C11R --- C31B).

The AAPA described in the instant application differs from the claimed invention because he does not explicitly disclose that the storage capacitors are provided between the cell electrodes and a respective one of the scan electrode lines.

Park discloses a liquid crystal display panel having pixel electrode (applicant's cell electrode), scan electrode lines (Gin, Gin-l) and storage capacitors (Cst) formed between the cell electrode and the previous scan electrode lines. He also discloses that such an arrangement implements gray levels (page 1, [0013]).

Park is evidence that ordinary workers in the art would find a reason, suggestion or motivation to form the storage capacitors between the cell electrodes and the scan electrode lines.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the display panel of the AAPA by placing the storage capacitors between the cell electrodes and respective, adjacent, or corresponding scan electrode lines to implement gray levels.

Accordingly, claims 1 and 16 would have been obvious.

As to claims 4 and 7, the AAPA also shows in Fig. 3 that display panel also comprising a data driver (55) and a scan driver (54) to drive the data electrode lines and the scan electrode lines respectively.

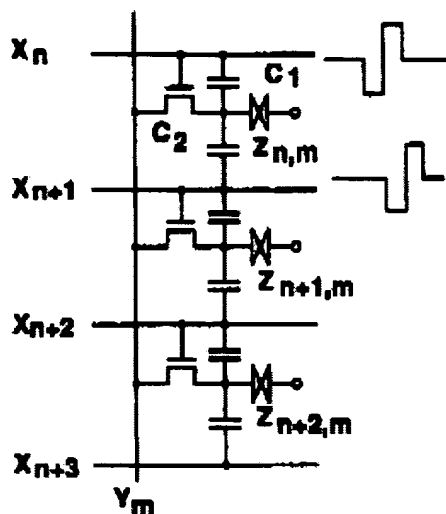
As to claim 6, the AAPA described in the instant application discloses the capacitance to be 0.06 PF (which is very close to approximately 0.07 PF). Further, considering that the AAPA does not explicitly disclose that the capacitance of the storage capacitor is approximately 0.07 PF to 0.2 PF, it is common and known in the art to set the capacitance of the storage capacitor within the claimed range to optimize the performance of the display panel and thus would have been obvious.

Claims 8 and 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Parks as applied above, and further in view of Takemura USPAT 5,852,488.

As to claim 8, AAPA in view of Parks disclose the display above.

AAPA in view of Parks do not disclose the display wherein storage capacitors are each provided between one of the cell electrodes and a scan electrode line coupled to the respective one cell electrode through one of the thin film transistors (Figure 1D) [col. 5, lines 28-55] to suppress voltage variations [Abstract].

**FIG. 1D**



Takemura is evidence that workers of ordinary skill in the art would find the reason, suggestion, or motivation to add storage capacitors that are each provided between one of the cell electrodes and a scan electrode line coupled to the respective one cell electrode through one of the thin film transistors to suppress voltage variations.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of AAPA in view of Park with added storage capacitors that are each provided between one of the cell electrodes and a scan electrode line coupled to the respective one cell electrode through one of the thin film transistors of Takemura to suppress voltage variations.

As to claim 11, the AAPA described in the instant application discloses the capacitance to be 0.06 PF (which is very close to approximately 0.07 PF). Further,

considering that the AAPA does not explicitly disclose that the capacitance of the storage capacitor is approximately 0.07 PF to 0.2 PF, it is common and known in the art to set the capacitance of the storage capacitor within the claimed range to optimize the performance of the display panel and thus would have been obvious.

As to claim 12, the AAPA described in the instant application also discloses (page 3, paragraph 0014) that the voltage is sustained in the storage capacitors between an ending point of scanning each of the respective scan electrode lines and a starting point of a lighting time which is applied to ones of the cell electrodes.

As to claims 13-14, the AAPA also discloses and shows in Fig. 5 that the display panel further comprising a glass substrate (51), wherein the scan electrode lines are provided on the glass substrate and an insulating layer provided on the data electrode lines and wherein the cell electrodes are formed on the insulating layer (page 4, paragraph 0015).

As to claim 15, it is also clear from Fig. 4 of the AAPA that the storage capacitors are formed by arranging the cell electrodes so that upper portions of the cell electrodes are disposed under the scan electrode lines [obvious for top-gate TFTs].

***Response to Arguments***

Applicant's arguments filed on 07 August 2006 have been fully considered but they are not persuasive.

Applicant's ONLY substantive arguments are as follows:

(1) Regarding base claim 1, the prior art teaches a capacitor connected to the previous scan electrode line as opposed to the corresponding line.

(2) Dependent claims are allowable because they directly or indirectly depend from an allowable base claim.

Examiner's responses to Applicant's ONLY arguments are as follows:

(1) It is respectfully pointed out that respective, adjacent, and corresponding are all considered too broad to read exclusively on storage capacitors that are each provided between one of the cell electrodes and a scan electrode line coupled to the respective one cell electrode through one of the thin film transistors.

(2) It is respectfully pointed out that in so far as Applicant has not argued rejection(s) of the limitations of dependent claim(s), Applicant has acquiesced said rejection(s).

Other arguments are moot due to new grounds of rejection.

Any references cited but not applied are relevant to the instant Application.



***Conclusion***

Applicant's amendment necessitated any new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy L. Rude whose telephone number is (571) 272-2301. The examiner can normally be reached on Mon-Thurs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



tlr

Timothy L Rude  
Examiner  
Art Unit 2871



ANDREW SCHECHTER  
PRIMARY EXAMINER